

**Attachment 1**  
**Summary of Major Submittals for the Remedial Action at**  
**(Site)**

<b>TASK</b>	<b>DELIVERABLE</b>	<b>REF NO.</b>	<b>NO. OF COPIES</b>	<b>DUE DATE (calendar days)</b>	<b>EPA REVIEW PERIOD</b>
1.1.2	Site Trip Visit Report		3	10 days after site visit	7 days after receipt of report
1.1.4	RA Work Plan		3	30 days after initiation of work assignment (WA)	21 days after receipt of Work Plan
1.1.4	Final RA Work Plan		3	15 days after receipt of EPA comments	NA
1.2.1	Status Reports		3	Monthly and as directed by WAM/RPM	NA
2.1.2	Draft Community Relations Plan (CRP)		3	14 days after completion of community interviews	7 days after receipt of draft CRP
2.1.2	Final CRP		3	7 days after receipt of EPA comments	NA
3.1	Draft Revised Site Management Plan (SMP)		3	21 days after approval of RA Work Plan	14 days after receipt of SMP
3.1	Final Revised SMP		3	10 days after receipt of EPA comments	NA
3.1.1	Draft Revised Health and Safety Plan (HASP)		3	21 days after approval of RA Work Plan	14 days after receipt of plan
3.1.1	Final Revised HASP		3	10 days after receipt of EPA comments	NA
3.1.2	Draft Revised Sampling and Analysis Plan (SAP)		3	21 days after approval of RA Work Plan	14 days after receipt of plan
3.1.2	Final Revised SAP		3	10 days after receipt of EPA comments	NA
3.2	Draft Revised Pollution Control & Mitigation Plan		3	21 days after approval of RA Work Plan	14 days after receipt of plan

<b>TASK</b>	<b>DELIVERABLE</b>	<b>REF NO.</b>	<b>NO. OF COPIES</b>	<b>DUE DATE (calendar days)</b>	<b>EPA REVIEW PERIOD</b>
3.2	Final Revised Pollution Control & Mitigation Plan		3	10 days after receipt of EPA comments	NA
3.3	Draft Revised Construction Management Plan		3	21 days after approval of RA Work Plan	14 days after receipt of plan
3.3	Final Revised Construction Management Plan		3	10 days after receipt of EPA comments	NA
6.2.10	Draft Final Inspection Report		3	10 days after Final Inspection	NA
6.2.10	Final Inspection Report		3	7 days after receipt of EPA comments	NA
7.5.4	Draft Data Evaluation Summary Report		3	14 days after receipt of analytical results from laboratory	14 days after receipt of report
7.5.4	Final Data Evaluation Summary Report		3	7 days after receipt of EPA comments	NA
9.1.1	Draft Revised Operations and Maintenance (O&M) Manual		3	30 days before Final Inspection	21 days after receipt of report
9.3	Draft Technical Memorandum		3	10 days after completion of performance tests	21 days after receipt of memorandum
9.3	Final Technical Memorandum		3	10 days after receipt of EPA comments	NA
10.4	Draft Remedial Action Report		3	30 days after Final Inspection	21 days after receipt of report
10.4	Final Remedial Action Report		3	14 days after receipt of EPA comments	NA
11.5	Draft Closeout Report		3	30 days after final RA Report submitted	21 days after receipt of report
11.5	Final Closeout Report		3	14 days after receipt of EPA comments	NA
11.6	Final Costs		3	90 days after WA closeout	NA

**Attachment 2**  
**Work Breakdown Structure (WBS) for**  
**Remedial Action (RA)**

**TASK 1 PROJECT PLANNING AND SUPPORT**

**1.0 Project Planning and Support**

- .01 Project Planning
  - .01 Attend Scoping Meeting
  - .02 Conduct Site Visit (if necessary)
  - .03 Evaluate Existing Information (if necessary)
  - .04 Work Plan Development
    - .01 Draft Work Plan Development
      - .01 Develop Narrative
      - .02 Develop Cost Estimate
      - .03 Internal QA & Submission
    - .02 Final Work Plan Preparation
      - .01 Attend Negotiation Meeting
      - .02 Modify Draft Work Plan/Cost Estimate
      - .03 Internal QA & Submission
- .02 Project Management
  - .01 Prepare Periodic Status Reports
    - .01 Document Cost and Performance Status
    - .02 Prepare/Submit Invoices
  - .02 Meeting Participation/Routine Communications
  - .03 Maintain Cost/Schedule Control System
  - .04 Manage, Track, and Report Equipment Status
  - .05 Project Closeout
  - .06 Coordinate with Local Emergency Response Teams

**TASK 2 COMMUNITY RELATIONS**

**2.0 Community Relations**

- .01 Community Relations Plan (CRP) Development
  - .01 Conduct Community Interviews
  - .02 Prepare CRP
    - .01 Draft CRP
    - .02 Final CRP
- .02 Prepare Fact Sheets
- .03 Public Hearing, Meetings, & Availability Support
  - .01 Technical Support
  - .02 Logistical & Presentation Support
  - .03 Public Notice Support (writing, or placement of)
- .04 Maintain Information Repository/Mailing List

**TASK 3 DEVELOPMENT AND UPDATE OF SITE SPECIFIC PLANS**

**3.0 Development and Update of Site Specific Plans**

- .01 Update Site Management Plan
  - .01 Update Health & Safety Plan
  - .02 Update Sampling & Analysis Plan (Chemical Data Acquisition Plan)
    - .01 Quality Assurance Project Plan
    - .02 Field Sampling Plan
    - .03 Data Management Plan
- .02 Update Pollution Control & Mitigation Plan
  - .01 Transportation & Disposal Plan (Waste Management Plan)
- .03 Update Construction Quality Assurance Plan

**TASK 4 PROCUREMENT OF SUBCONTRACT**

#### 4.0 Procurement of Subcontract

- .01 Prebid (Pre-Solicitation) Activities
  - .01 Printing & Distribution of Contract Documents
  - .02 Advertising/Soliciting of Bids
    - .01 Prebid (pre-solicitation) meetings
    - .02 Resolution of inquiries/Issuing Addenda
    - .03 On-site Visits
  - .03 Readvertise/Resolicit bids if necessary
- .02 Pre-Award Activities
  - .01 Receipt of Bids (offers)
    - .01 Determination of responsive, responsible bidders (offerors)
    - .02 Perform Reference checks
    - .03 Bid (offer) Tabulation
    - .04 Bid (offer) Analysis
  - .02 Receipt of follow-up items from lowest responsible bidder (offeror)
  - .03 Review of EEO, MBE requirements, SDB subcontracting plans
  - .04 Request for Consent from EPA
- .03 Post-Award Activities
  - .01 Attend Post Award Meetings/Preconstruction Conference
  - .02 Review permits, insurance, bonds, etc.
  - .03 Review & approve RA subcontractor schedule
  - .04 Review & approve RA subcontractor measurement and payment schedule
  - .05 Perform RA subcontractor Submittal Review - Issue Notice to Proceed (NTP)
  - .06 Review Revisions/Addendum of RA subcontractor Submittals

#### TASK 5 MANAGEMENT SUPPORT

##### 5.0 Management Support

- .01 Financial Management
  - .01 Review & approve Invoices
  - .02 Review & approve Subcontract Modifications
  - .03 Maintain Tracking Systems
    - .01 Construction Codes of Accounts
    - .02 Work Breakdown Structure (WBS)
    - .03 Schedule (CPM, PERT, etc.)
- .02 Cost Monitoring
  - .01 Weekly/Monthly Tracking
  - .02 Analyze Progress Payments
  - .03 Monitor RA Subcontractor for Compliance with Davis-Bacon Act
- .03 Engineering Support
  - .01 Review Field Logs
  - .02 Periodic Attendance at Meetings
- .04 Engineering Support Option
  - .01 Review Field Change Requests
  - .02 Review VE Proposals
  - .03 Review Non-Conformance Reports
  - .04 Review Re-Design Proposals

#### TASK 6 DETAILED RESIDENT INSPECTION (Resident Engineer)

##### 6.0 Detailed Resident Inspection

- .01 Attend Periodic Meetings
- .02 Provide Field Presence and Oversight
  - .01 Maintain Field Logs and Daily Diaries
  - .02 Interpret Subcontract Documents
  - .03 Develop Sketches Reflecting Field Conditions
  - .04 Review Submitted Construction Drawings
  - .05 Prepare Reports on Inspections
  - .06 Monitor, Update, & Report Construction Progress
  - .07 Review/Recommend Time Extensions

- .08 Coordinate with Home Office/Management Support
- .09 Perform Davis-Bacon Act Inspections
- .10 Final Inspection
  - .01 Conduct Site Walkover
  - .02 Prepare draft Final Inspection Report
  - .03 Respond to Comments
  - .04 Prepare Final Inspection Report
- .03 Provide Engineering Support to Design Team
  - .01 Recommend Actions on H&S Considerations
  - .02 Review/Recommend Action on VE Proposals
  - .03 Review/Recommend Design Changes
  - .04 Provide Support on Change Order Requests
  - .05 Provide Support in Claims Reduction
  - .06 Provide Support for Construction Schedule Changes
- .04 Perform Field Testing
- .05 Monitor Quality Assurance/Quality Control Procedures

## TASK 7 CLEANUP VALIDATION

### 7.0 Cleanup Validation

- .01 Mobilization/Demobilization
  - .01 Mobilize (acquire equipment/supplies/personnel)
  - .02 Demobilize
- .02 Field Investigation
  - .01 Conduct Geological Investigations (Soils/Sediments)
    - .01 Surface Soil Sample Collection
    - .02 Subsurface Soil Sample Collection
    - .03 Soil Boring/Permeability Sampling
    - .04 Sediments Sample Collection
    - .05 Soil Gas Survey
    - .06 Test Pit
  - .02 Conduct Air Investigations
    - .01 Sample Collections
    - .02 Air Monitoring Station
  - .03 Conduct Hydrogeological Investigations - Groundwater
    - .01 Well Systems Installation
      - .01 Accomplish Mobilization
      - .02 Perform Well Development
      - .03 Conduct Downhole Geophysics
      - .04 Install Monitoring Wells
      - .05 Install Test Wells
      - .06 Install Gas Wells
    - .02 Sample Collection
    - .03 Hydro Punch
    - .04 Tidal Influence Study
    - .05 Hydraulic Tests (Pump Tests)
    - .06 Groundwater Elevation Measurement
  - .04 Conduct Hydrogeological Investigations—Surface Water
    - .01 Sample Collection
    - .02 Tidal Influence Study
    - .03 Surface Water Elevation Measurement
  - .05 Conduct Waste Investigation
    - .01 Sample Collection (Gas, Liquid, Solid)
    - .02 Derived Waste Disposal (Gas, Liquid, Solid)
  - .06 Conduct Geophysical Investigation
    - .01 Surface Geophysical Activity
    - .02 Magnetometer
    - .03 Electromagnetics
    - .04 Ground Penetrating Radar
    - .05 Seismic Refraction

- .06 Resistivity
- .07 Site Meteorology
- .08 Cone Penetrometer Survey
- .09 Remote Sensor Survey
- .10 Radiological Investigation
- .07 Conduct Ecological Investigation
  - .01 Wetland and Habitat Delineation
  - .02 Wildlife Observations
  - .03 Community Characterization
  - .04 Identification of Endangered Species
  - .05 Biota Sampling/Population Studies
- .08 Collect Contaminated Building Samples
- .09 Dispose of Investigation Derived Waste
- .03 Sample Analysis
  - .01 Screening Type Laboratory Sample Analysis
    - .01 Analyze Air/Gas Samples
      - .01 Organic
      - .02 Inorganic
      - .03 Radiochemistry
    - .02 Analyze Groundwater Samples
      - .01 Organic
      - .02 Inorganic
      - .03 Radiochemistry
    - .03 Analyze Surface Water Samples
      - .01 Organic
      - .02 Inorganic
      - .03 Radiochemistry
    - .04 Analyze Soil/Sediment Samples
      - .01 Organic
      - .02 Inorganic
      - .03 Radiochemistry
    - .05 Analyze Waste (Gas) Samples
      - .01 Organic
      - .02 Inorganic
      - .03 Radiochemistry
    - .06 Analyze Waste (Liquid) Samples
      - .01 Organic
      - .02 Inorganic
      - .03 Radiochemistry
    - .07 Analyze Waste (Solid) Samples
      - .01 Organic
      - .02 Inorganic
      - .03 Radiochemistry
    - .08 Analyze Biota Samples
      - .01 Organic
      - .02 Inorganic
      - .03 Radiochemistry
    - .09 Analyze Bioassay Samples
    - .10 Perform Bioaccumulation Studies
  - .02 CLP-Type Laboratory Sample Analysis
    - .01 Analyze Air/Gas Samples
      - .01 Organic
      - .02 Inorganic
      - .03 Radiochemistry
    - .02 Analyze Groundwater Samples
      - .01 Organic
      - .02 Inorganic
      - .03 Radiochemistry
    - .03 Analyze Surface Water Samples
      - .01 Organic

- .02 Inorganic
- .03 Radiochemistry
- .04 Analyze Soil/Sediment Samples
  - .01 Organic
  - .02 Inorganic
  - .03 Radiochemistry
- .05 Analyze Waste (Gas) Samples
  - .01 Organic
  - .02 Inorganic
  - .03 Radiochemistry
- .06 Analyze Waste (Liquid) Samples
  - .01 Organic
  - .02 Inorganic
  - .03 Radiochemistry
- .07 Analyze Waste (Solid) Samples
  - .01 Organic
  - .02 Inorganic
  - .03 Radiochemistry
- .08 Analyze Biota Samples
  - .01 Organic
  - .02 Inorganic
  - .03 Radiochemistry
- .09 Analyze Bioassay Samples
- .10 Perform Bioaccumulation Studies
- .04 Analytical Support and Data Validation
  - .01 Prepare and Ship Environmental Samples
    - .01 Groundwater Samples
    - .02 Surface and Subsurface Soil Samples
    - .03 Surface Water & Sediment Samples
    - .04 Air Samples
    - .05 Biota Samples
    - .06 Other Types of Media Sampling and Screening
  - .02 Coordinate with Appropriate Sample Management Personnel
  - .03 Implement EPA-Approved Laboratory QA Program
  - .04 Provide Sample Management (Chain of Custody, Sample Retention, & Data Storage)
  - .05 Perform Data Validation
    - .01 Review Analysis Results Against Validation Criteria
    - .02 Provide Written Documentation of Validation Efforts
- .06 Data Evaluation
  - .01 Data Useability Evaluation/Field QA/QC
  - .02 Data Reduction, Tabulation and Evaluation
    - .01 Evaluate Geological Data (Soils/Sediments)
    - .02 Evaluate Air Data
    - .03 Evaluate Hydrogeological Data—Groundwater
    - .04 Evaluate Hydrogeological Data—Surface Water
    - .05 Evaluate Waste Data
    - .06 Evaluate Geophysical Data
    - .07 Evaluate Ecological Data
  - .03 Modeling
    - .01 Contaminant Fate and Transport
    - .02 Water Quality
    - .03 Groundwater
    - .04 Air
    - .05 Other Modeling
  - .04 Document Data Evaluation Efforts

## **TASK 8 REMEDIAL ACTION IMPLEMENTATION (SUBPOOL ACTIVITIES)**

- 8.0 Remedial Action Implementation
  - .01 Remedial Action Subcontract Cost

- .02 Remedial Action Reserve (15% of Remedial Action Subcontract)

## TASK 9 PROJECT PERFORMANCE

### 9.0 Project Performance (O&M)

- .01 Operation & Maintenance (O&M)
  - .01 Review O&M Manual
    - .01 Describe/Analyze Potential Operating Problems
    - .02 Review Conformity to Applicable Performance & Operations Performance
  - .02 Ensure Adequate Training for O&M Staff
  - .03 Develop Corrective Action Plans (if necessary)
  - .04 Review Records/Reporting Requirements
  - .05 Review Laboratory Procedures
  - .06 Review Process Systems
  - .07 Review Safety and Emergency Systems
  - .08 Review Warranty Information and Files
- .02 System Performance
  - .01 Evaluate Equipment
  - .02 Site Restoration
  - .03 Gather and Test Samples (see Task 7 for details)
- .03 Report Project Performance
  - .01 Develop Draft Technical Memoranda and Cost and Performance Report
  - .02 Respond to Comments
  - .03 Prepare Final Technical Memoranda and Cost and Performance Report

## TASK 10 PROJECT COMPLETION AND CLOSE OUT

### 10.0 Project Completion and Close Out

- .01 Demobilization
  - .01 Removal of Temporary Facilities
  - .02 Site Restoration
  - .03 Termination of Engineering Support Activities
- .02 Pre-Final/Final Activities
  - .01 Make Pre-Final/Final Inspection
  - .02 Make Lockout Inspection
- .03 Final Payment/Punch List
  - .01 As-built Resolution/Certification
  - .02 Trial Period Oversight
- .04 Remedial Action Report
  - .01 Prepare Draft Remedial Action Report
  - .02 Respond to Comments
  - .03 Prepare/Issue Final Remedial Action Report

## TASK 11 WORK ASSIGNMENT CLOSE OUT

### 11.0 Work Assignment Close Out

- .01 Return Documents to Government
- .02 File Duplication/Distribution/Storage
- .03 File Archiving
- .04 Microfiche/Microfilm/Optical Disk
- .05 Prepare Closeout Report



### Attachment 3 Regulations and Guidance Documents

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RD process:

1. American National Standards Practices for Respiratory Protection. American National Standards Institute Z88.2-1980, March 11, 1981.
2. ARCS Construction Contract Modification Procedures September 89, OERR Directive 9355.5-01/FS.
3. CERCLA Compliance with Other Laws Manual, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (DRAFT), OSWER Directive No. 9234.1-01 and -02.
4. Community Relations in Superfund — A Handbook, U.S. EPA, Office of Emergency and Remedial Response, June 1988, OSWER Directive No. 9230.0-3B.
5. A Compendium of Superfund Field Operations Methods, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.
6. Construction Quality Assurance for Hazardous Waste Land Disposal Facilities, U.S. EPA, Office of Solid Waste and Emergency Response, October 1986, OSWER Directive No. 9472.003.
7. Contractor Requirements for the Control and Security of RCRA Confidential Business Information, March 1984.
8. Data Quality Objectives for Remedial Response Activities, U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.
9. Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, U.S. EPA Region IV, Environmental Services Division, April 1, 1986 (revised periodically).
10. EPA NEIC Policies and Procedures Manual, EPA-330/9-78-001-R, May 1978, revised November 1984.
11. Federal Acquisition Regulation, Washington, DC: U.S. Government Printing Office (revised periodically).
12. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive NO. 9355.3-01.
13. Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potential Responsible Parties, U.S. EPA Office of Emergency and Remedial Response, EPA/540/G-90/001, April 1990.
14. Guidance on Expediting Remedial Design and Remedial Actions, EPA/540/G-90/006, August 1990.
15. Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites, U.S. EPA Office of Emergency and Remedial Response (DRAFT), OSWER Directive No. 9283.1-2.
16. Guide for Conducting Treatability Studies Under CERCLA, U.S. EPA, Office of Emergency and Remedial Response, Prepublication version.
17. Guide to Management of Investigation-Derived Wastes, U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9345.3-03FS, January 1992.
18. Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.
19. Health and Safety Requirements of Employees Employed in Field Activities, U.S. EPA, Office of Emergency and Remedial Response, July 12, 1982, EPA Order No. 1440.2.
20. Interim Guidance on Compliance with Applicable of Relevant and Appropriate Requirements, U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.
21. Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.
22. Methods for Evaluating the Attainment of Cleanup Standards: Vol. 1, Soils and Solid Media, February 1989, EPA 23/02-89-042; vol. 2, Ground water (Jul 1992).
23. National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, Federal Register 40 CFR Part 300, March 8, 1990.
24. NIOSH Manual of Analytical Methods, 2nd edition. Volumes I-VII for the 3rd edition, Volumes I and II, National Institute of Occupational Safety and Health.
25. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health/Occupational Health and Safety Administration/United States Coast Guard/Environmental Protection Agency, October 1985.
26. Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, February 19, 1992, OSWER Directive 9355.7-03.
27. Procedure for Planning and Implementing Off-Site Response Actions, Federal Register, Volume 50, Number 214, November 1985, pages 45933-45937.

28. Procedures for Completion and Deletion of NPL Sites, U.S. EPA, Office of Emergency and Remedial Response, April 1989, OSWER Directive No. 9320.2-3A.
29. Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors, Volume 1, Preliminary Edition for Trial Use and Comment, American Society of Civil Engineers, May 1988.
30. *Remedial Design/Remedial Action (RD/RA) Handbook*, U.S. EPA, Office of Solid Waste and Emergency Response (OSWER) 9355.0-04B, EPA 540/R-95/059, June 1995.
31. Revision of Policy Regarding Superfund Project Assignments, OSWER Directive No. 9242.3-08, December 10, 1991. [Guidance, p. 2-2]
32. Scoping the Remedial Design (Fact Sheet), February 1995, OSWER Publ. 9355-5-21 FS.
33. Standard Operating Safety Guides, U.S. EPA, Office of Emergency and Remedial Response, November 1984.
34. Standards for the Construction Industry, Code of Federal Regulations, Title 29, Part 1926, Occupational Health and Safety Administration.
35. Standards for General Industry, Code of Federal Regulations, Title 29, Part 1910, Occupational Health and Safety Administration.
36. Structure and Components of 5-Year Reviews, OSWER Directive No. 9355.7-02, May 23, 1991. [Guidance, p. 3-5]
37. Superfund Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, April 1990, EPA/540/G-90/001.
38. Superfund Remedial Design and Remedial Action Guidance, U.S. EPA, Office of Emergency and Remedial Response, June 1986, OSWER Directive No. 9355.0-4A.
39. Superfund Response Action Contracts (Fact Sheet), May 1993, OSWER Publ. 9242.2-08FS.
40. TLVs-Threshold Limit Values and Biological Exposure Indices for 1987-88, American Conference of Governmental Industrial Hygienists.
41. Treatability Studies Under CERCLA, Final. U.S. EPA, Office of Solid Waste and Emergency Response, EPA/540/R-92/071a, October 1992.
42. USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, U.S. EPA, Office of Emergency and Remedial Response, July 1988.
43. USEPA Contract Laboratory Program Statement of Work for Organic Analysis, U.S. EPA, Office of Emergency and Remedial Response, February 1988.
44. User's Guide to the EPA Contract Laboratory Program, U.S. EPA, Sample Management Office, August 1982.
45. Value Engineering (Fact Sheet), U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9355.5-03FS, May 1990.

## **Attachment 4**

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## **Attachment 5**

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